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AMENDMENTS TO THE CLAIMS

1. (currently amended) A voltage boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output,

wherein said second circuit comprises a tracking capacitor connected between the output and second nodes, said tracking capacitor producing the voltage at the second node.

- 2. (original) The voltage boosting circuit of claim 1, wherein the voltage on said second node is indicative of the boosted output voltage.
- 3. (original) The voltage boosting circuit of claim 1, wherein the voltage on said second node is indicative of a difference between the boosted output voltage and the pre-charge voltage.
- 4. (original) The voltage boosting circuit of claim 1, wherein the first output is a current based on a difference between the boosted output voltage and the reference voltage.
 - 5. (canceled)

- 6. (canceled)
- 7. (currently amended) The voltage boosting circuit of claim 6, further comprising: A voltage boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output, said second circuit comprising a first capacitor connected between said pre-charge voltage and a third node connected to the first output and a second capacitor connected between the output node and the second node;

a first switch connected between the third node and a ground potential; and

a second switch connected between the second node and the ground potential,

wherein in a pre-charge phase, said switches are closed to allow the capacitors to be pre-charged to the pre-charge voltage.

8. (original) The voltage boosting circuit of claim 7, wherein in a boosting phase, said switches are open, preventing the capacitors from being pre-charged to the pre-charge voltage, said first capacitor being boosted by the first output to cause the boosted output voltage to be present at said output node.

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9. (currently amended) The voltage boosting circuit of claim 1, A voltage boosting circuit comprising:

a first circuit, said first circuit having a first input connected to receive a reference voltage, said first circuit having a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit adapted to output a boosted output voltage on an output node based on a received pre-charge voltage and first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit being adapted to use a voltage on the second node and the reference voltage to generate the first output,

wherein said first circuit comprises a voltage-to-current converter circuit and said first output is a current based on a difference between the voltage on the second node and the reference voltage.

10. (currently amended) The voltage boosting circuit of claim 1, A voltage boosting circuit comprising:

a first circuit, said first circuit having a first input connected to receive a reference voltage, said first circuit having a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit adapted to output a boosted output voltage on an output node based on a received pre-charge voltage and first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit being adapted to use a voltage on the second node and the reference voltage to generate the first output,

wherein said first circuit comprises:

a current source adapted to output outputting a control current; and

a differential circuit having a first input connected to <u>receive</u> the reference voltage and a second input connected to <u>receive</u> the voltage at the second node, said differential circuit having a common-source output for said first output, said first output being controlled by the control current and having a value based on a difference between the voltage on the second node and the reference voltage.

- 11. (original) The voltage boosting circuit of claim 10, wherein said differential circuit comprises a differential transistor input pair.
- 12. (original) The voltage boosting circuit of claim 10, wherein said differential circuit comprises cascaded transistors.
- 13. (original) The voltage boosting circuit of claim 10, wherein said current source controls a rising time of the boosted output voltage.
- 14. (currently amended) The voltage boosting circuit of claim 1, A voltage boosting circuit comprising:

a first circuit, said first circuit having a first input connected to receive a reference voltage, said first circuit having a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit adapted to output a boosted output voltage on an output node based on a received pre-charge voltage and first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit

being adapted to use a voltage on the second node and the reference voltage to generate the first output,

wherein said first circuit comprises:

a current source outputting a control current; and

an integrator circuit having a first input connected to the reference voltage and a second input connected to the voltage at the second node, said first output being controlled by the control current and having a value based on a difference between the voltage on the second node and the reference voltage.

15. (original) The voltage boosting circuit of claim 14, wherein said current source controls a rising time of the boosted output voltage.

Claims 16-21 (canceled)

22. (currently amended) A pixel cell for an imager, said pixel cell comprising:

a first circuit element connected to a voltage; and

a voltage boosting circuit outputting said voltage to said first circuit element, said boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a

second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output,

wherein said first circuit comprises a voltage-to-current converter circuit and said first output is a current based on a difference between the voltage on the second node and the reference voltage.

- 23. (original) The pixel cell of claim 22, wherein the voltage on said second node is indicative of the boosted output voltage.
- 24. (original) The pixel cell of claim 22, wherein the voltage on said second node is indicative of a difference between the boosted output voltage and the precharge voltage.
- 25. (original) The pixel cell of claim 22, wherein the first output is a current based on a difference between the boosted output voltage and the reference voltage.
- 26. (currently amended) The pixel cell of claim-22, A pixel cell for an imager, said pixel cell comprising:

a first circuit element connected to a voltage line; and

a voltage boosting circuit adapted to output a voltage on the line to said first circuit element, said boosting circuit comprising:

a first circuit, said first circuit having a first input connected to receive a reference voltage, said first circuit having a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit adapted to output a boosted output voltage on an output

node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit adapted to use a voltage on the second node and the reference voltage to generate the first output,

wherein said second circuit comprises a tracking capacitor connected between the output and second nodes, said tracking capacitor producing the voltage at the second node.

- 27. (canceled)
- 28. (currently amended) The pixel cell of claim 27, wherein said boosting circuit further comprises: A pixel cell for an imager, said pixel cell comprising:

a first circuit element connected to a voltage; and

a voltage boosting circuit outputting said voltage to said first circuit element, said boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output;

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output, said second circuit comprising a first capacitor connected between said pre-charge voltage and a third node connected to the first output and a second capacitor connected between the output node and the second node;

a first switch connected between the third node and a ground potential; and a second switch connected between the second node and the ground potential,

wherein in a pre-charge phase, said switches are closed to allow the capacitors to be pre-charged to the pre-charge voltage.

- 29. (original) The pixel cell of claim 28, wherein in a boosting phase, said switches are open, preventing the capacitors from being pre-charged to the pre-charge voltage, said first capacitor being boosted by the first output to cause the boosted output voltage to be present at said output node.
 - 30. (canceled)
- 31. (currently amended) The pixel cell of claim 22, A pixel cell for an imager, said pixel cell comprising:

a first circuit element connected to a voltage; and

<u>a voltage boosting circuit outputting said voltage to said first circuit element,</u> <u>said boosting circuit comprising:</u>

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a

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voltage on the second node and the reference voltage to generate the first output, wherein said first circuit comprises:

a current source outputting a control current; and

a differential circuit having a first input connected to the reference voltage and a second input connected to the voltage at the second node, said differential circuit having a common-source output for said first output, said first output being controlled by the control current and having a value based on a difference between the voltage on the second node and the reference voltage.

- 32. (original) The pixel cell of claim 31, wherein said differential circuit comprises a differential transistor input pair.
- 33. (original) The pixel cell of claim 31, wherein said differential circuit comprises cascaded transistors.
- 34. (original) The pixel cell of claim 31, wherein said current source controls a rising time of the boosted output voltage.
- 35. (currently amended) The pixel cell of claim 22, A pixel cell for an imager, said pixel cell comprising:

a first circuit element connected to a voltage; and

a voltage boosting circuit outputting said voltage to said first circuit element, said boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output, wherein said first circuit comprises:

a current source outputting a control current; and

an integrator circuit having a first input connected to the reference voltage and a second input connected to the voltage at the second node, said first output being controlled by the control current and having a value based on a difference between the voltage on the second node and the reference voltage.

- 36. (original) The pixel cell of claim 35, wherein said current source controls a rising time of the boosted output voltage.
- 37. (original) The pixel cell of claim 22, wherein said first circuit element comprises a reset transistor.
- 38. (original) The pixel cell of claim 22, wherein said first circuit element comprises a row select transistor.
- 39. (original) The pixel cell of claim 22, wherein said first circuit element comprises a transfer transistor.
- 40. (original) The pixel of claim 22, wherein the boosted output voltage is a voltage source of the pixel.

Claims 41-46 (canceled)

47. (currently amended) An imager comprising:

a pixel cell, said pixel cell comprising a first circuit element connected to a boosted voltage, and a voltage boosting circuit outputting said boosted voltage to said first transistor, said boosting circuit comprising:

a first circuit, said first circuit having a first input connected to a reference voltage and a first output; and

a second circuit connected to receive the first output and a pre-charge voltage, said second circuit outputting a boosted output voltage on an output node based on the pre-charge voltage and the first output, said second circuit having a second node connected to a second input of the first circuit, said first circuit using a voltage on the second node and the reference voltage to generate the first output,

wherein said second circuit comprises a tracking capacitor connected

between the output and second nodes, said tracking capacitor

producing the voltage at the second node.

Claims 48-54 (canceled)

55. (original) A method of manufacturing a voltage boosting circuit, said method comprising:

providing a voltage-to-current converter circuit;

connecting a first input of the voltage-to-current converter to a reference voltage;

providing a capacitive boosting circuit;

connecting an input of the capacitive boosting circuit to an output of the voltage-to-current converter circuit;

connecting the input of the capacitive boosting circuit to a pre-charge voltage source; and

connecting an output of the capacitive boosting circuit to a second input of the voltage-to-current converter circuit.

- 56. (original) The method of claim 55, wherein the capacitive boosting circuit comprises a tracking capacitor.
- 57. (original) The method of claim 55, wherein said step of providing a capacitive boosting circuit comprises:

providing a first capacitor connected between the pre-charge voltage source and a node connected to the output of the voltage-to-current converter; and

providing a second capacitor connected between an output node and a node connected to the second input of the voltage-to-current converter.

58. (original) The method of claim 55, wherein said step of providing a voltage-to-current converter comprises:

providing a current source outputting a control current; and

providing an integrator circuit having a first input connected to the reference voltage and a second input connected to the output of the capacitive boosting circuit.

59. (original) The method of claim 55, wherein said step of providing a voltage-to-current converter comprises:

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providing a current source outputting a control current; and

providing a differential circuit having a first input connected to the reference voltage and a second input connected to the output of the capacitive boosting circuit.